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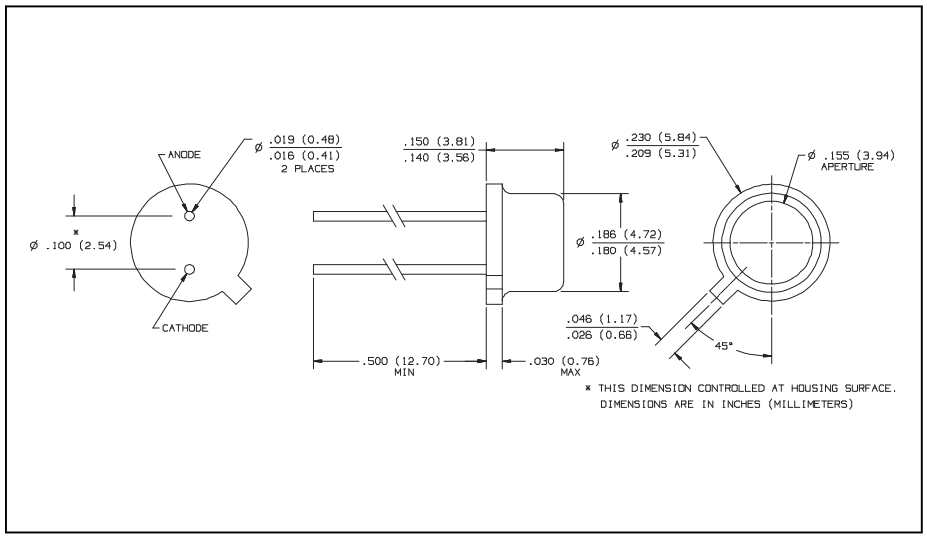
Product Bulletin OP230WPS
March 2001

Hermetic Point Source Infrared Emitting Diode
Type OP230WPS



Features

- Point source irradiance pattern
- Wavelength matched to silicon's peak response
- Fast switching speed
- TO-46 package style with flat window

Description

The OP230WPS is an 850 nm, top surface emitting, IRED. The .004" emitting area centered under a nondistorting flat lens can be used in many applications where external lensing is desired.

The stable V_F vs. Temperature characteristic make them ideal for applications were voltage is limited (such as battery operation).

The low t_r/t_f make them ideal for high speed operations.

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Reverse Voltage . . . . . 2.0 V
Continuous Forward Current . . . . . 100 mA
Peak Forward Current (2 µs pulse width, 0.1% duty cycle) . . . . . 1.0 A
Storage and Operating Temperature Range . . . . . -55° C to +125° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron] . . . . . 260° C(1)
Power Dissipation . . . . . 200 mW(2)

NOTES:
(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
(2) Derate linearly 2.0mW/°C above 25°C.
(3) $E_{e(APT)}$ is a measurement of the average apertured radiant incidence upon a sensing area .250" (6.35 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and .466" (11.84 mm) from the measurement surface. $E_{e(APT)}$ is not necessarily uniform within the measured area.

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Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{e(APT)}$	Apertured Irradiance	.5			mW/cm^2	I_F = 100 mA
V_F	Forward Voltage			2.20	V	I_F = 100 mA
I_R	Reverse Current			1.0	µA	V_R = 2 V
λp	Wavelength Peak Emission		850		nm	I_F = 100 mA
B	Spectral Bandwidth Between Half Power Points		80		nm	I_F = 100 mA
θ_{HP}	Emission Angle at Half Power Points		±45°		Deg.	I_F = 100 mA
t_r	Rise Time		10		ns	$I_{F(PK)}$ = 100 mA
t_f	Fall Time		10		ns	PW = 10 µs, D.C. = 10%

Typical Performance Curves